

Figure 2

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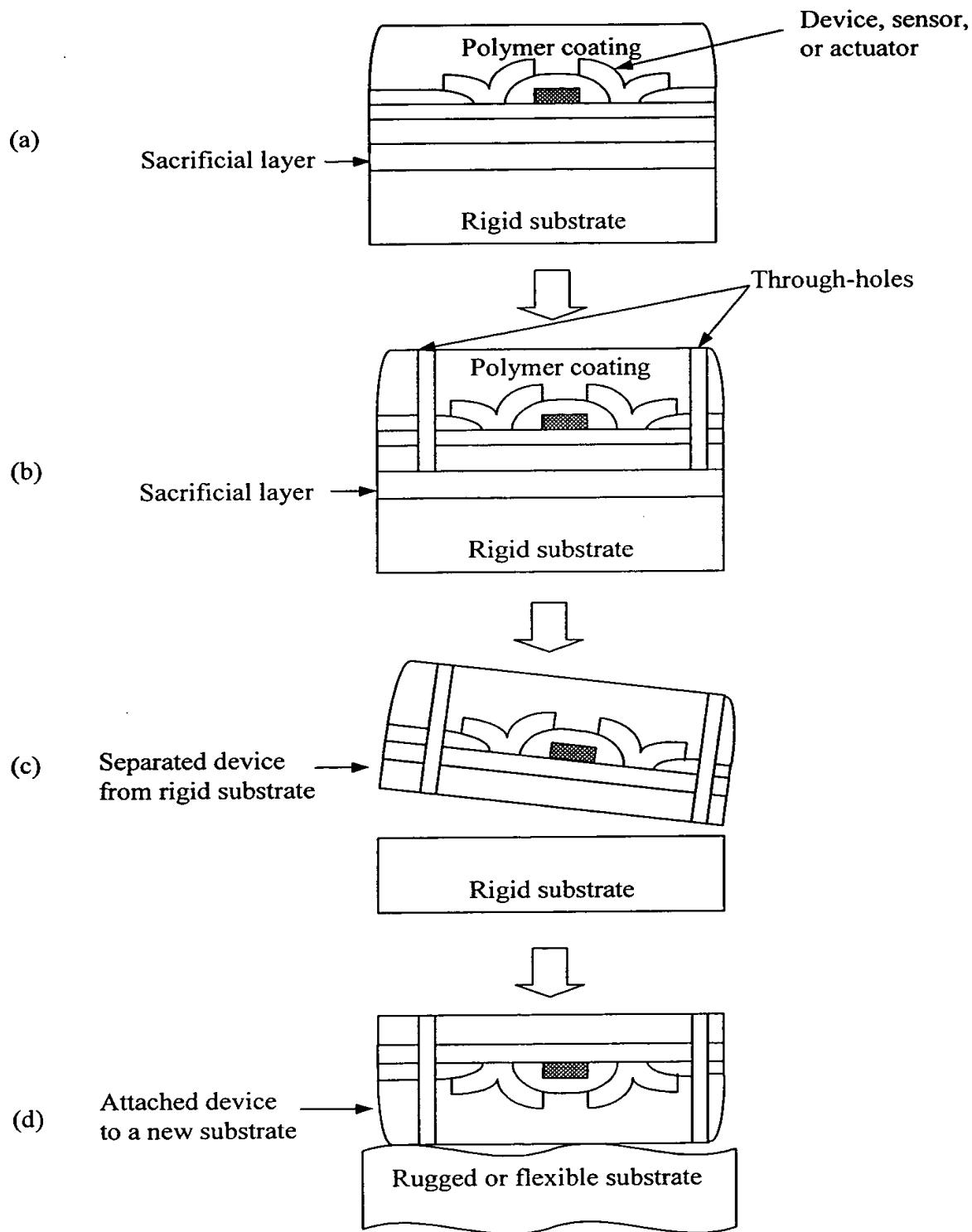
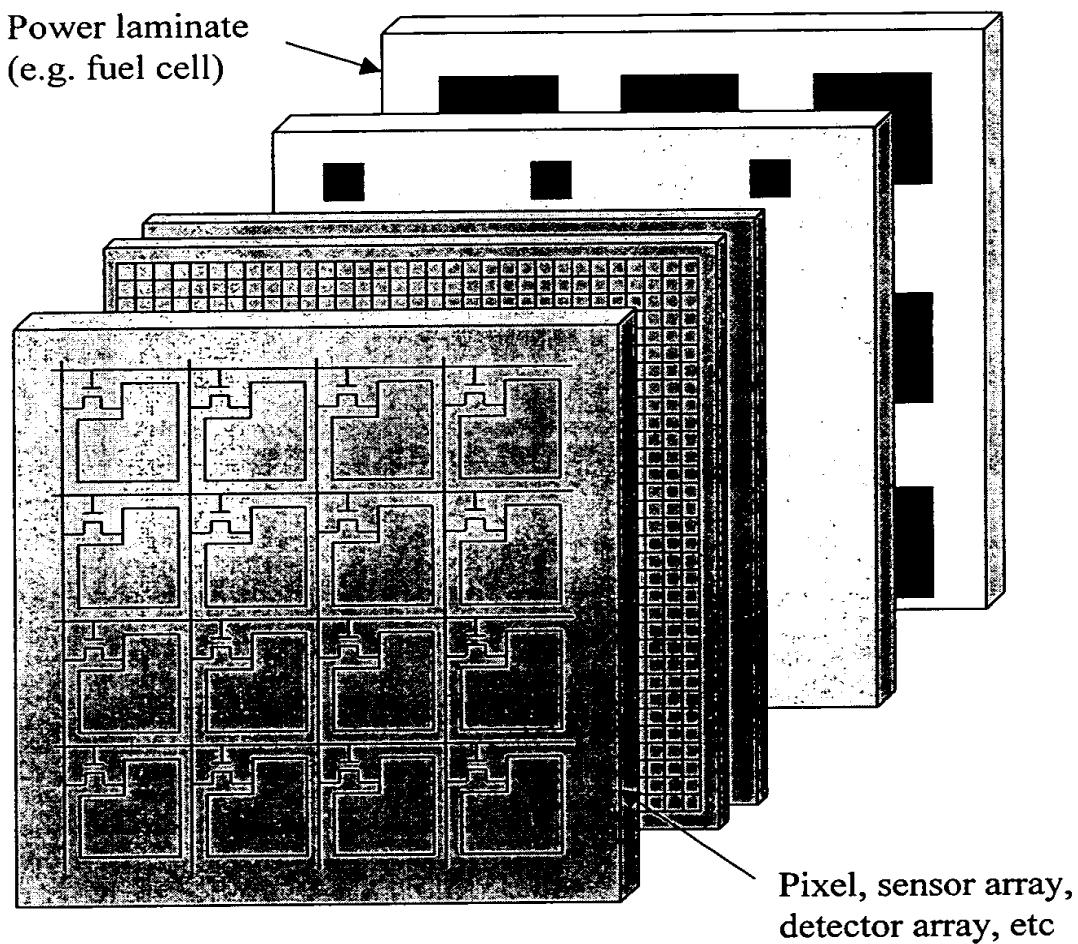


Figure 3

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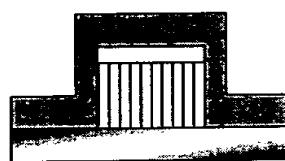




(a) Sacrificial layer deposition



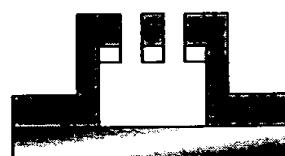
(b) Lithography and etching



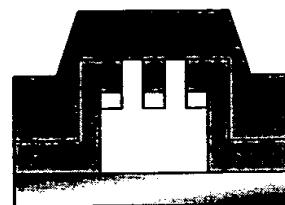
(c) Wall /capping layer deposition



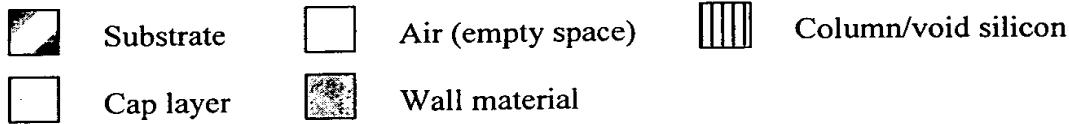
(d) Wet etchant access window etching
(Holes occur as needed in top or sides
for effective etching)

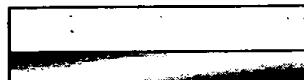


(e) Sacrificial layer etching



(f) Window filling

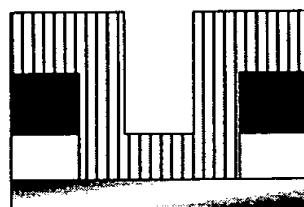




(a) Base layer deposition



(b) Lithography and base layer etching



(c) Sacrificial layer deposition



(d) Lift-off



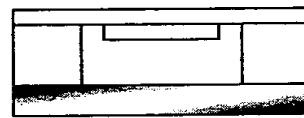
(e) Capping layer deposition



(f) Wet etchant access window etching
(Holes occur as needed in top or sides
for effective etching)



(g) Sacrificial layer etching



(h) Window filling



Substrate



Air (empty space)



Column/void silicon



Stencil layer

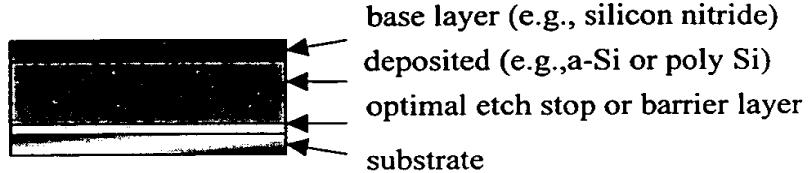


Base/wall/cap material or materials

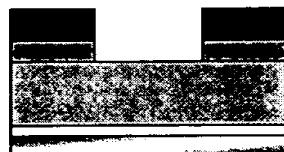
Figure 6

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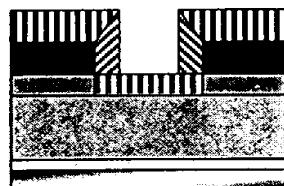
(a) Base layer deposition



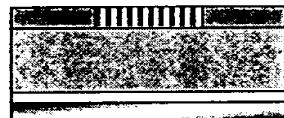
(b) Lithography and base layer etching



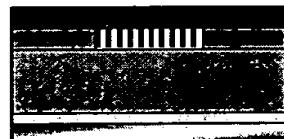
(c) Sacrificial layer deposition



(d) Lift-off



(e) Capping layer deposition



(f) Etchant access window etching



(g) Sacrificial layer etching and trench creation



(h) Window filling

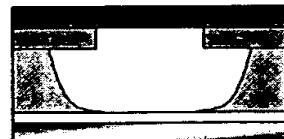
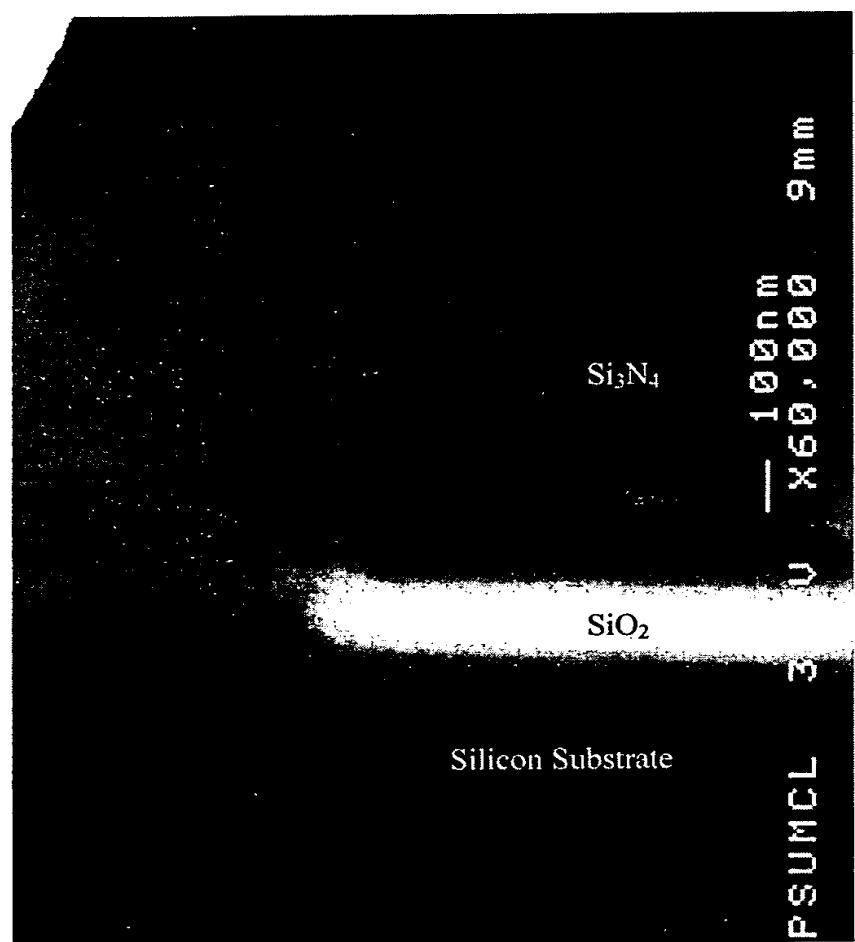


Figure 7

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Figure 8

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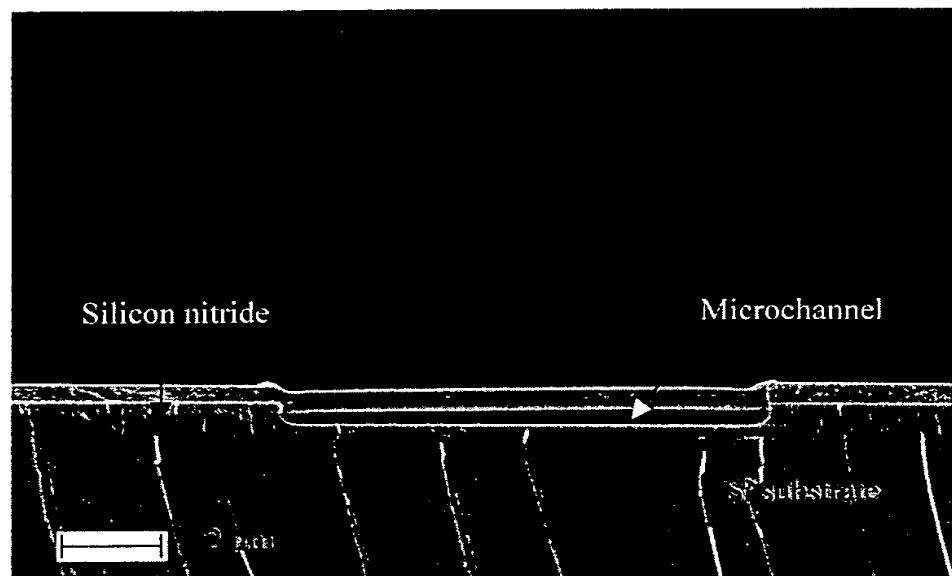
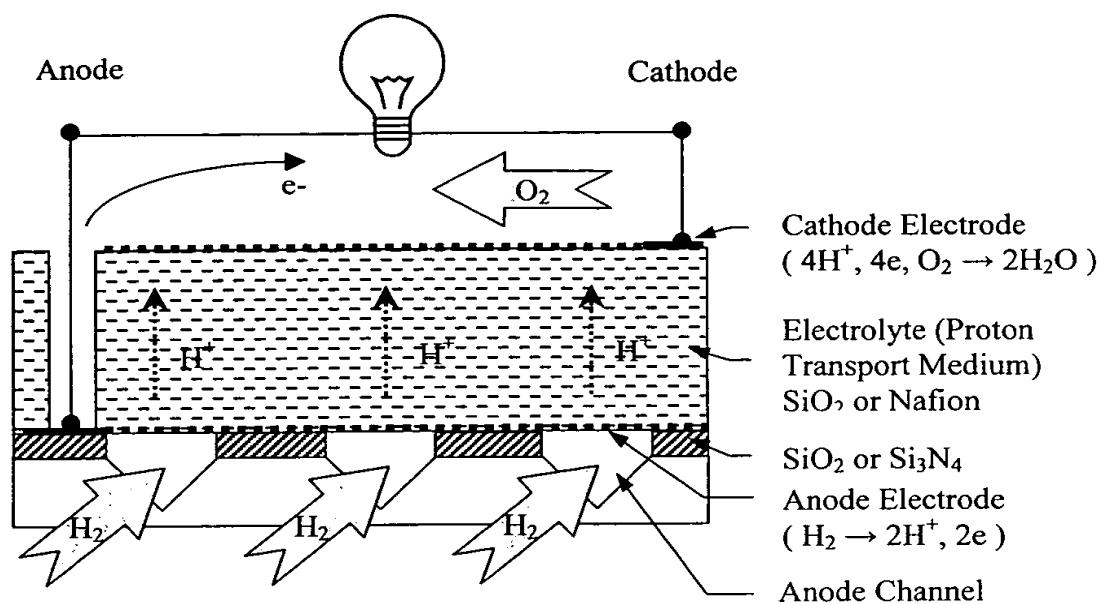


Figure 9

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(a)



(b)

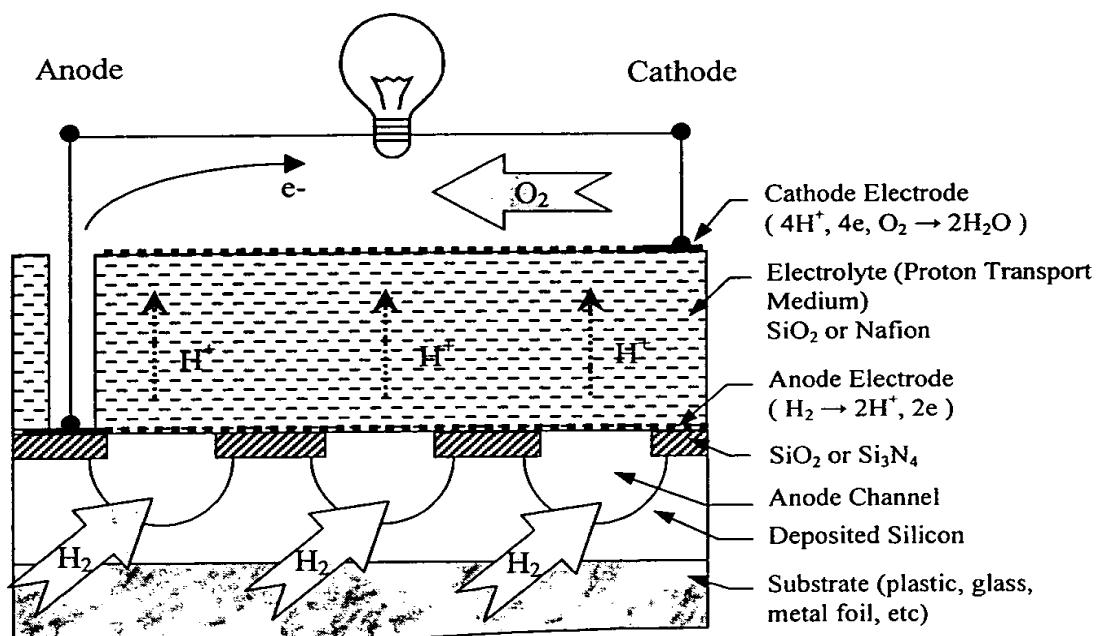
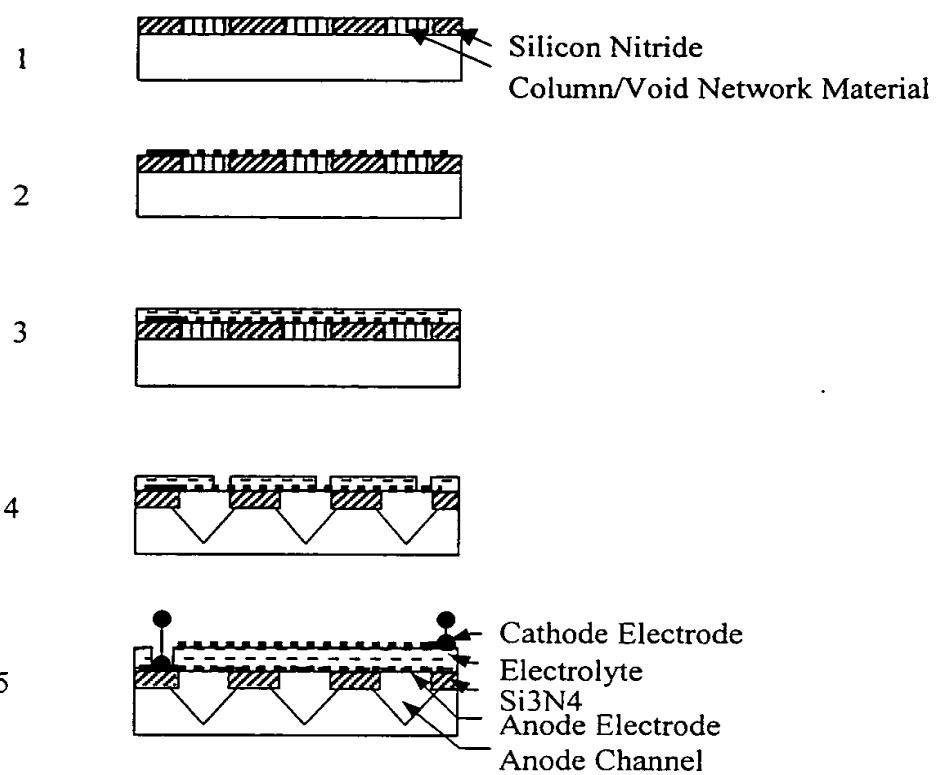


Figure 10

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(a)



(b)

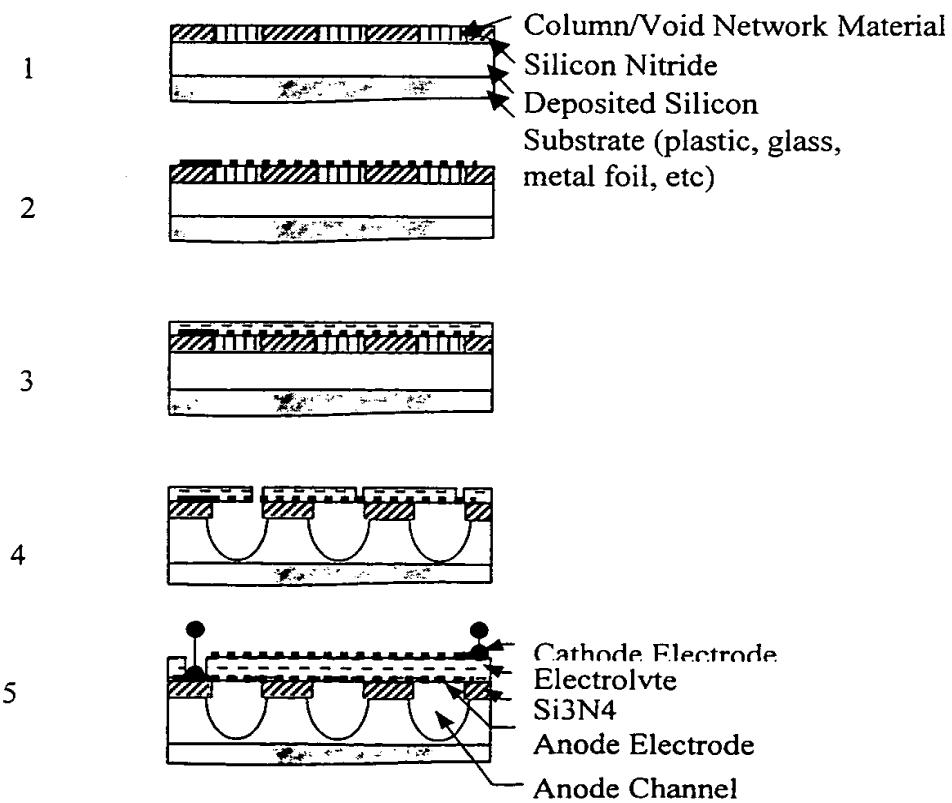
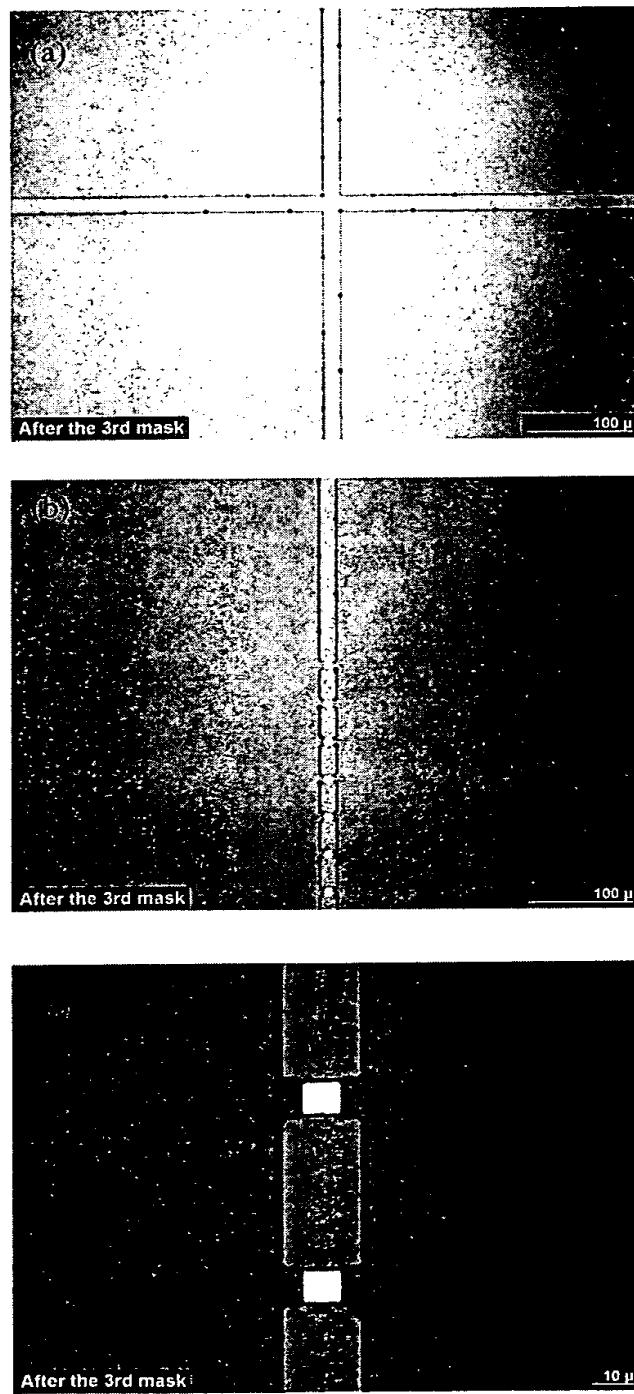


Figure 11

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Figure 12

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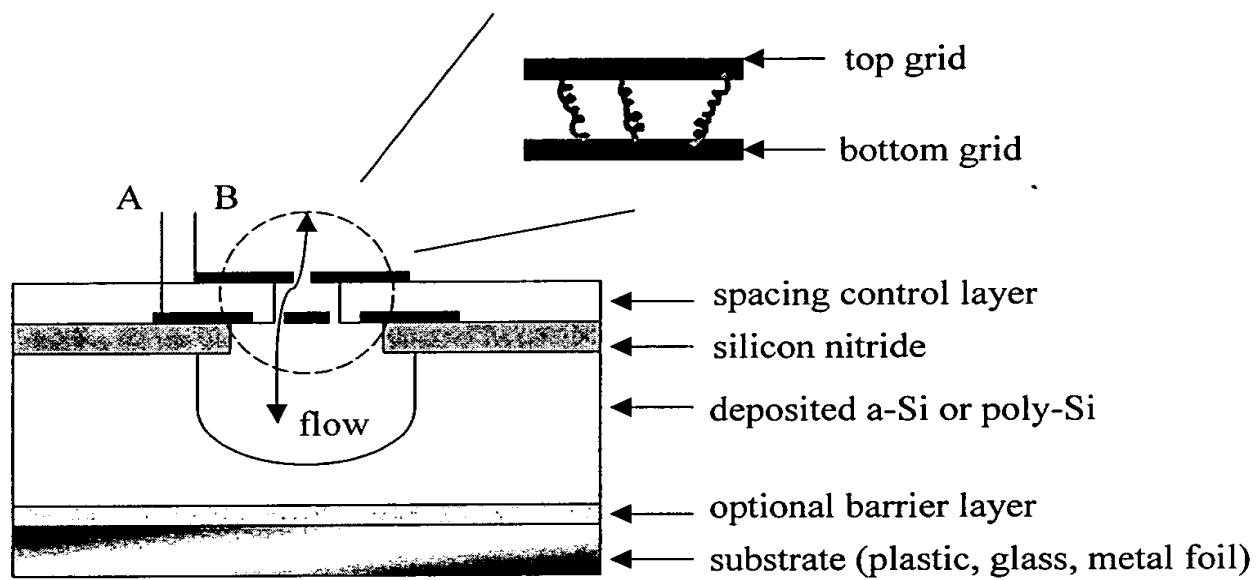


Figure 13

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(a) Cr/Au deposition



(b) Lithography and etching



(c) Column/void network material deposition



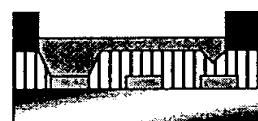
(d) Contact tip etching



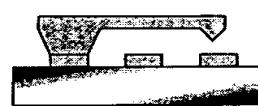
(e) Beam support etching



(f) Lithography



(g) Au deposition



(h) Column/void network material etching

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